

Index

- Ability grouping, 257, 262, 368-70
- Abstraction, 69, 290, 440
- Academies, 18, 372
- Acceleration, 71
- Accrediting associations, 29, 305
- Across the Years* (Percival), 354
- Activist approach, 397, 444
- Acts, legislative
 - Act for the Encouragement of Elementary Education, 356
 - Act for the establishment of free schools . . . , 355
 - British North American Act of 1867, 412
 - Common Schools Act, 23, 372
 - Compulsory attendance laws, 109, 184, 386, 393, 403
 - District Public School Act (Ontario), 372
 - Education Act of 1841, 356-57
 - Education Act of 1846, 357
 - Fabrique Act, 356
 - GI Bill, 327
 - Higher Education Act, 332
 - Massachusetts law of 1642, 17
 - National Defense Education Act, 143, 267
 - Union Act of 1840, 375
- Adams, Daniel, 22, 373
 - Adam's New Arithmetic*, 362
 - Arithmetic in which the Principles of Operating by Numbers are Analytically Explained, and Synthetically applied*, 22
- Adams, John, 21
 - Adam's New Arithmetic* (Adams), 362
- Addison-Wesley Elementary Mathematics textbook series, 443
- Adler, Irving, 146, 296
- Advanced Arithmetic for Canadian Schools* (Smith and McMurchy), 379
- Advanced placement programs, 250
- Agassiz, Louis, 31
- Albert, A. A., 256, 270, 272
- Alberta Teachers' Association (A.T.A.), 423, 432
- Alcott, Bronson, 13
- Algebra, 27, 28, 32, 33, 37, 40, 41, 47, 48, 51-55, 78, 82, 158-61, 163, 165-66, 167, 168, 170-72, 176-77, 183, 187, 203, 206, 209, 211, 218-20, 222, 228, 234, 244, 247, 253, 254, 269, 276, 277, 278, 283, 293, 304, 308, 310, 366, 368, 374, 376, 377, 378, 383, 389, 394, 397, 404, 408, 413, 420, 421, 423, 424, 434, 435, 440, 444
- Boolean, 82
 - difference between arithmetic and, 203
 - as generalized arithmetic, 160, 178, 207, 221
 - as general mathematics, 220-22
 - linear, 294, 330, 344, 433
 - matrix, 276
 - modern, 78, 261, 265
 - utility of, 178
- Algebra* (Bridge), 374
- Algebra* (Hall and Knight), 422
- Allen, Frank B., 80, 209
- Allendoerfer, Carl, 256, 260
- Althouse, Dr., 402, 410
- American Association for the Advancement of Science (AAAS), 62, 80, 273
 - guidelines (with NASDTEC), 348-50
 - Works: "Mathematics Instruction for Purposes of General Education," 62; "The Preparation of High School Science and Mathematics Teachers," 327-28
- American Association of School Administrators (AASA), 240
- American Federation of Teachers of the Mathematical and Natural Sciences, 39, 180

- American Historical Association, 169
American Journal of Mathematics (Sylvester and Story), 30
 American Mathematical Society (AMS), 4, 30, 39, 42, 75, 169, 170, 175, 231, 237, 256, 270, 271, 272, 275, 324. *See also* Committee subentries
 Chicago section, 30
 American Philological Association, 169
American Practical Navigator, The (Bowditch), 21
Analysis of New Mathematics Programs, An (NCTM), 76, 284-85
 Analytic method of discovering proofs, 167
 Angell, James Burrill, 29
 Applications, 290, 294, 423. *See also* Social utility
 Appreciation of mathematics, 62, 204, 241, 260
Approximate Computation (Bakst), 259
 Archibald, R. C., 40
 Arithmetic, 27, 37, 41, 49, 52, 55, 93, 98, 99, 102, 104-5, 121, 130-31, 157-58, 164-67, 206, 228, 253, 304, 355, 366, 372, 373, 375, 376, 383, 394, 397, 402, 413, 414, 415-19, 420, 421, 424-25, 464. *See also* Number, science of
 aims of, 51
 ciphering books for, 13-14, 105, 372
 commercial, 13, 52, 219, 366, 376, 390, 394, 407
 difference between algebra and, 203
 generalized, 221
 goals of, 318
 grade placement of topics in, 127, 165
 integrated study of, 47
 intellectual, 25
 mental, 25, 382, 413, 416, 425
 minimum essentials for, 190
 postponement of topics in, 48, 50
 as preparation for algebra, 158
 rote procedures in, 104
 segmented approach to, 185
 theories of instruction in, 125 (*see also* Meaning theory of arithmetic)
 unit as fundamental idea of, 102
Arithmetic in which the Principles of Operating by Numbers are Analytically Explained, and Synthetically applied (Adams), 22
Arithmetic (Bonnycastle), 373, 374
Arithmetic (Davies), 29
Arithmetic (Smith and Roberts), 420
Arithmetica of Cyffer-Konst . . . Als Mede Een kort ontwerp van de Algebra (Venema), 16
Arithmetick, Vulgar and Decimal (Greenwood), 12, 23
Arithmetic Made Easy to Children (Kimber), 103
Arithmetic on the Plan of Pestalozzi with Some Improvements, An (Colburn), 22, 103
Arithmetic Primer for Young Masters and Misses, An (Temple), 103
Arithmétique ou l'art de compter toutes sortes de nombres avec la plume et les jettons, L' (Father Jean François), 360
 Articulation, 29, 33, 53, 61, 71, 78, 398
Art without Science (Eaton), 29
Arte para aprender todo el menor del arithmetica sin maestro (Paz), 12
 Asbury, Frank, 435
 Association
 Alberta Teachers' Association, 423, 432
 American, of School Administrators, 240
 American, for the Advancement of Science (*see main entry*)
 American Historical Association, 169
 American Philological Association, 169
 Canadian, of Mathematics Teachers, 430-31
 Central, of Science and Mathematics Teachers, 39, 176, 314 (*see also School Science and Mathematics*)
 of Colleges and Secondary Schools of the Middle States and Maryland, 169, 171
 Mathematics and Physics, of Ontario, 387
 National Education Association (*see main entry*)
 National, of Secondary School Principals, 245
 National, of State Directors of Teacher Education and Certification, 80, 348-50
 National Teachers Association, 33
 New England, of Colleges and Secondary Schools, 169

- New England, of Teachers of Mathematics, 80
- North Central, of Colleges and Secondary Schools, 169, 171, 175
- Nova Scotia Mathematics Teachers' Association, 440
- Ontario, of Teachers of Mathematics and Physics, 380, 398
- Ontario Education Association, 389, 390, 394, 401, 403, 404
- Progressive Education Association (see *main entry*)
- Southern, of Colleges and Secondary Schools, 169
- for Symbolic Logic, 256
- of Teachers of Mathematics in the Middle States and Maryland, 43
- of Teachers of Mathematics in New England, 43
- Astronomy, 19
- Audiovisual aids, 68, 78, 258, 448
- Austin, C. M., 6, 194-95
- Ausubel, David, 85
- Axiomatic development of theorems, 159, 161, 167, 174, 180-81, 441
- Axiomatization, 41, 447
- Axioms for problem solving, 179
- "Background Mathematics for Elementary Teachers" (Ruddell, Dutton, and Reckzek), 328
- Ball State Teachers College Experimental Program, 267, 269
- Banneker, Benjamin, 20
- Barber, Harry C., 208
- Basic Geometry* (Birkhoff and Beatley), 41, 223, 278
- Beatley, Ralph, 41, 223
- Basic Geometry*, 41, 223, 278
- Beatty, Dr. S., 395, 408
- Bebberman, Max, 69, 252, 253-54, 289, 453
- Bédard, Louis, 361
- Begle, Edward G., 75, 82, 139, 146, 237, 256, 265, 266, 270, 272, 273, 279, 280, 453
- Behaviorism, 113, 216
- Bell, E. T., 211, 224-25
- Bennett, A. A., 55, 226
- Benz, H. E., 212
- Bernard, M. M., 360
- Bers, Lipman, 272
- Bestor, Arthur E., 71, 134
- Betz, William, 50, 51, 180, 194, 208, 211-12, 213, 221, 225
- Biard, Father, 354
- Bibaud, Michel, 361-62
- Biggs, Edith, 439
- Binet, Alfred, 118
- Bing, R. H., 256
- Birchard, I. J., 382-83
- Birkhoff, George David, 41, 42
- Bishop, A. W., 409
- Bittinger, Marvin L., 143
- Blair, Vevia, 43, 200
- Bledsoe, Albert Taylor, 31
- The Philosophy of Mathematics*, 31
- Bobbitt, Franklin, 188-89, 190, 192, 207, 214, 218, 224, 251
- Bolyai, Janos, 178
- Bonds. See *Connectionism*
- Bonham, G. C., 437-38
- Boring, Edwin, 186, 187
- History of Experimental Psychology*, 185
- Bourdon's Algebra* (Davies), 29
- Bourgeois, Sister Marguerite, 355
- Bouthillier, Jean Antoine, 361, 362
- Bowditch, Nathaniel, 20, 21, 30
- The American Practical Navigator*, 21
- translation of Laplace's *Mécanique Céleste*, 30
- Brauer, Richard, 75, 272
- Breslich, Ernest R., 51, 176, 195, 208, 219, 307
- British Columbia *Programme of Studies*, 418
- British North American Act of 1867, 412
- Brooks, Edward, 26-27, 102, 110-11
- Brown, Claude H., 233
- Brown, Guillaume, 360
- Brown, Kenneth E., 209
- Brownell, William A., 49, 120, 123-24, 126, 128-29, 137, 216
- Brueckner, Leo J., 50, 120-21, 307
- Brumfiel, Charles F., 76, 269
- Brunel, Michel, 360
- Bruner, Jerome, 84-85, 136-37, 143, 145, 288, 289
- The Process of Education*, 84, 280, 288
- Buchan, Earl of, 21
- Buchan, J. M., 382
- Burington, R. S., 249-50
- Burke, Edmund, 361
- Burton, William, 314-15

- Burwell, Hugh, 429-30
 Business, influence of, on mathematics education, 188-92, 202
 Buswell, Guy, 220
 Butler, C., 307
 Butler, Nicholas M., 177
 Butts, Freeman, 164
- Cairns, Stewart S., 71-72, 250-51
 Cajori, Florian, 11, 21, 160, 175, 180
 Calculus, the, 31, 55, 78, 207, 247, 260, 274, 292, 294, 310, 330, 395, 423, 433, 444
 Callahan, R. E., 188, 191
 Education and the Cult of Efficiency, 188
 Cambridge Conference, 79, 82, 271-72, 291-94, 295-96, 348, 462
 on School Mathematics, 57, 145, 146-52, 345-46
 on Teacher Training, 78, 346-48
 Campbell, J. D., 372, 375, 377
 Canadian Association of Mathematics Teachers, 430-31
 Canadian Mathematics Congress, 336, 401-2, 443, 446
 Why Study Mathematics? 402
 Canadian Teachers' Federation, 429, 430, 444, 447, 448
 Mathematics and the Teacher, 444
 Ottawa seminar (1960), 428-30
 Careless, J. M. S., 392-93, 401
 Carnegie Foundation, 72, 74, 76, 251, 259, 270
 Carter, James G., 303
 Cartesian coordinates, 294
 Cartier, Jacques, 357
 Cavalieri, Bonaventura, 31
 Central Association of Science and Mathematics Teachers, 39, 43, 176, 177
 founding of, 314
 School Science and Mathematics, 39, 43, 177
 Chaboillez, Augustin, 361
 Chateaufort, Amy Olive, 158, 159
 Chauvaux, Charles, 360
 Christofferson, Halbert C., 222, 224
 Chicago, 176
 Conference on Research Potential and Training, 270, 271, 272
 Men's Mathematics Club of, 43, 195, 210
 World's Fair, 41
- Child-study movement, 116, 117, 119, 133
 expressionism in the, 119
 child-centeredness in the, 119, 131-32, 196
 Christian Brothers, 356, 362
 Chronology of events, 23, 34-35, 44-45, 65-66, 88-89
 Chute, H. N., 177
 Clapp, F. L., 114
 Clark, John R., 191, 206, 215, 221
 Clason, Robert, 13, 38
 Classical colleges, 354, 358-59, 368
 Classroom Management (Bagley), 188
 Clinchy, Evans, 287-89, 290-91
 Clinton, DeWitt, 303
 Coar, Henry, 173
 Cognition, 217
 Colburn, Warren, 2, 4, 21, 25-26, 32, 306-7, 373
 An Arithmetic on the Plan of Pestalozzi with Some Improvements, 22, 103
 First Lessons, 26, 105
 inductive approach of, 32
 inductive discovery of, 26
 An Introduction to Algebra on the Inductive Method of Instruction, 32
 Coleman, A. J., 434
 College Entrance Examination Board (CEEB), 42, 73-74, 168, 171, 202, 209, 221, 235, 259, 260, 266, 446.
 See also Commission and Committee subentries
 Advanced Placement Program, 71
 examinations, 171, 234, 260
 Report of the Commission on Mathematics, 74
 College entrance requirements, 18, 29, 37, 53, 54, 61, 68, 168-73, 180, 201, 202, 366
 College preparatory programs, 53, 69, 239, 241, 242, 260-61, 262, 414, 433, 446
 Colleges
 Antioch College, 331
 Ball State Teachers College, 76, 267, 269
 Collège Charles-Carnier, 360
 Collège de Montréal, 360
 College of St. Catherine, 332
 College of William and Mary, 18
 Loyola College, 368

- Montana State College, 332
 Reed College, 331
 Upper Canada College, 373
 Yale College, 15
 Collèges d'Enseignement Général et Professionnel (C.E.G.E.P.), 368
 Colleges for Professional and Vocational Training, 368
Commentaries on Pure and Applied Mathematics (Wigner), 457
 Commission
 on Accredited Schools of the North Central Association, 171
 on Aims and Objectives of Education in Ontario, 428
 Educational Policies Commission (NEA and AASA), 240, 244, 246
 (see also *Education for All American Youth*)
 Hall-Dennis Commission (see Commission, on Aims and Objectives of Education in Ontario)
 Hope Commission, 391, 393, 401, 410
 International, on the Teaching of Mathematics (International Congress of Mathematicians), 39, 46, 167, 182-83, 311-12, 390-91
 Joint Commission (MAA and NCTM), 54, 55, 58, 61, 62, 227-31, 233, 236, 239, 259, 268, 323-24
 on Mathematics (CEEB), 73, 76, 235, 237, 259-66, 268, 270, 271, 273, 276, 334-35, 409, 411, 428, 434
 Ontario Mathematics Commission (O.M.C.), 284, 434, 435, 436, 441
 Royal, of Inquiry on Education in the Province of Quebec, 365, 402
 on Post-War Plans (NCTM), 6, 50, 54, 58, 60, 61, 67, 243-46, 250, 257, 324-25, 327
 on the Reorganization of Secondary Education (NEA), 192
 on the Secondary School Curriculum (PEA), 54-55
 on the Training and Utilization of Advanced Students of Mathematics (MAA), 62, 321-23
 Committee
 on Advanced Placement (CEEB), 71
 on College Entrance Requirements (NEA), 33, 42, 46, 168-69, 170, 175, 307-8
 Cooperative, on the Teaching of Science and Mathematics (AAAS), 62, 68, 80, 327-28, 336-37
 on Economy of Time (NEA), 168, 190, 194, 248
 of Eight (MSG), 272
 Elementary Education Committee (O.M.C.), 437, 438-39
 of Fifteen on Elementary Education (NEA), 37, 108, 168
 of Fifteen on the Geometry Syllabus, National (American Federation of Teachers of the Mathematical and Natural Sciences and the NEA), 39, 180, 207, 222
 on the Function of Mathematics in General Education (PEA), 225-27, 230-31, 233, 239
 on Geometry (NCTM), 223
 In-Service Education Committee (NCTM), 333
 National, on Mathematical Requirements (MAA), 5, 40-43, 46-47, 52, 53, 57, 62, 197-209, 219, 221, 222, 223, 248, 316-19
 Physical Science Study Committee (PSSC), 74, 75, 271
 Policy, for Mathematics, 270
 on the Problem of Mathematics in Secondary Education (NEA's Commission on the Reorganization of Secondary Education), 62, 193
 Secondary School Committee (Canadian Mathematics Congress), 446
 Secondary School Curriculum Committee (NCTM), 266-67, 335-36
 of Seven (National Society for the Study of Education), 125-27
 Standing, on Education and Schools, 356
 Subcommittee on Education for Service of the War Preparedness Committee (AMS and MAA), 237
 of Ten on Secondary School Studies (NEA), 4, 33, 46, 163-68, 170, 173, 186, 307-8, 387, 388, 389, 463
 on the Undergraduate Program (CUP), 81
 on the Undergraduate Program in Mathematics (CUPM) (MAA), 81, 337-40, 341-45
 War Policy Committee (AMS and MAA), 60
 War Preparedness Committee (AMS and MAA), 58, 231, 237

- Common learnings, 239, 243, 244
 Common Schools Act, 372
 Commonwealth Conference on Mathematics in Schools, 449
 Commutativity, 49
 Competence, 6, 47, 244
 functional, 58, 60, 63, 68, 69, 191, 244-45, 246, 257
 Complex numbers, 247
 Compulsory attendance laws, 109, 184, 386, 393, 403
 Computation, 48, 52, 229
 from approximate data, 203
 skill in, 127, 218, 222
 Computer-programming instruction, 281, 437
 Computers, 135, 144, 290, 448
 Comte, Auguste, 32
 Conant, James Bryant, 340-41
 Concepts
 nonverbal awareness of, 294
 versus skills, 285
 Conference Board of the Mathematical Sciences, 80
 Conference on Mathematics of the Committee of Ten, 164-68
 Congregation of Notre Dame, 355, 360
 Connectionism, 38, 49, 113, 115, 128, 129, 133, 216, 313, 318, 417. *See also* Learning theory
 common-element paradigm for, 187
 "Contents of Children's Minds, The" (Hall) 108
 Continuity, 78
 Correlated mathematics, 166, 173, 176, 178, 196, 205, 206, 207, 395
 Council of Education (Quebec), 357, 358
 Council of Public Instruction (Ontario), 375, 376, 379
 Counts, George S., 119
 Dare the School Build a New Social Order? 119
Cours d'Algèbre (Garand), 364
Cours d'Algèbre Élémentaire (F.E.C.), 364
 Cousin, Victor, 31
 Crathorne, A. R., 43, 200
 Cremin, Lawrence A., 108, 118, 119-20, 157, 164, 184, 240
 Cubberly, Elwood P., 189
 Cuisenaire-Gattegno method, 365
 Cuisenaire rods, 143, 443, 444
 Cult of efficiency, 188-92, 202
 Cultural values, 63, 204
 Curriculum, 228, 375, 376, 439-40
 college, 19-20, 28, 81
 core, 191, 241, 243, 447
 differentiated, 257
 elective approach to building of, 164
 elementary school, 164
 experimentation with the, 327
 four divisions of learning in, 239
 grade placement of topics in, 122, 127, 165, 459
 high school, 413
 integrated, 409, 414
 junior high school, 208, 211, 218
 model, 206-7
 spiral, 38, 78, 79, 116, 220, 279, 292, 436
 traditional, 243, 247, 378
 unified, 239 (*see also* Unification movement; Unified mathematics)
 watering down the, 213
 Currie, I. I., 416
 Daboll, David A., 15
 Daboll, Nathan, 15
Daboll's Schoolmaster's Assistant, Being a Plain Practical System of Arithmetic; Adapted to the United States (Daboll), 15
 Dainville, François de, 359
 Dalrymple, Charles O., 190
 Dane, Nazala, 447-48
Dare the School Build a New Social Order? (Counts), 119
 Data, 57, 226
 analysis of, 160
 Davies, Charles, 29, 31, 42, 161
 Arithmetic, 29
 Bourdon's Algebra, 29
 Descriptive Geometry, 29
 Legendre's Geometry, 29
 The Logic and Utility of Mathematics with the Best Methods Explained and Illustrated, 34
 Surveying, 29
 Davis, Robert B., 77, 139
 Dean, J. E., 398
 Decimal currency in Canada, 377
 Deductive thinking, 26, 73, 260, 262, 382, 390, 431
 De Garmo, Charles, 306, 307
 Del Grande, J. J., 418
 De Moivre's theorem, 440
 Denechau, Denys, 361
 Depression

- the British, of 1857, 374
 the Great, 53, 393, 396, 418
 Désaulniers, Isaac Le Sieur, 362
 Descartes, René, 31
Descriptive Geometry (Davies), 29
 Determinants, 247
 Developmental Project in Secondary Mathematics of Southern Illinois University, 269, 284, 296
Developmental Psychology of Jean Piaget, The (Flavell), 142
 Dewey, John, 38, 39, 48, 94, 111, 116, 117, 119, 176, 186, 192, 215, 216, 217, 289, 307, 313
The Psychology of Number, 111, 381
 Dickman, Kern, 250
 Dienes, Zoltan P., 78, 144, 444, 448
 Discovery approach to instruction, 32, 72, 143, 254, 255, 279, 288, 293, 297, 444. *See also* Heuristic approach
 Discovery learning, 254, 255, 262, 293, 436
 Discovery teaching, 2, 84, 85, 330
 Distributive law, 178-79, 284
 District Public School Act (Ontario), 372
 Dolbeau, Jean, 354
 Dominion status for Canada, 385
 Douglas, Edwin C., 260
 Douglass, Harl R., 220, 250
 Downey, W. F., 43, 200
 Drill, 48, 49, 131, 213, 218-19, 220, 229, 232, 277, 291, 293, 305, 403, 413, 416, 417, 418, 447
 Duff, George, 447
 Dumont, Eustache, 361
 Dunbar, Ruth, 134
 Duplessis, Pacifique, 354
 Durham, Lord, 356, 375
 Durrant, J. E., 402, 403
 Duvernay, Ludger, 363
 Eaton, Amos, 29
Art without Science, 29
 Education
 departments of, 306
 of girls, 355
 schools of, 306
 Education Act of 1841, 356-57
 Education Act of 1846, 357
 Educational Services Incorporated, 345
 Educational Testing Service (ETS), 73, 259, 270
Education and the Cult of Efficiency (Callahan), 188
Education for All American Youth (Educational Policies Commission), 239, 243
Education through Mathematics, 423
 Edwards, P. D., 250
 Eicholz, Robert, 269
 Elective courses, 28, 29
Elementary Algebra, First Course (Millis), 178
Elementary Algebra for Canadian Schools (Smith and McMurchy), 379
Elementary Mathematics from an Advanced Standpoint: Geometry (Klein, tr. by Hedrick and Noble), 41, 183
 Elementary school, 25-27, 37-38, 48-51, 76-78, 137, 307, 358, 372, 437, 444, 445. *See also* Curriculum, elementary school
 algebra in, 37, 164, 169
 geometry in, 2, 77, 164, 181, 292, 437
Elementary Trigonometry (Hall and Knight), 365, 422
Elements of Algebra (McLellan), 380-81, 382
Elements of Algebra (Sangster and Todhunter), 379
Elements of Euclid (McKay), 383
Elements of Geometry (Legendre), 16
 Elicker, Paul, 83
 Eliot, Charles William, 28, 164
 Elliott, Edward Charles, 314
 Elliott, H. A., 449
Emerging Practices in Mathematics Education (Twenty-second Yearbook, NCTM), 257-59
 Enrichment materials, 72, 78
 Enrollment, 184, 217, 378, 393, 396
 in algebra, 209
 college, 249
 in geometry, 54, 209, 223
 in mathematics, 48, 53-54, 58, 197, 209
 in secondary schools, 212, 413
 Equation, concept of, 166
 Equation solving, 179, 242, 253
 Euclid, 161, 180, 373, 374, 376, 389, 390, 409, 419
Euclid (Todhunter and Loney), 422
Euclid's Elements of Geometry (Potts and Todhunter), 379
 Eudoxus, 167
 Evaluation, 257, 285, 293

- Evenson, A. B., 431-32
 Experimental courses, 201, 205
- Fabrique Act, 356
- Faculty psychology, 28, 99, 102, 113,
 133, 156, 161, 162, 164, 166, 305,
 313, 415-16
- Failure rates, 53, 163, 177, 197, 211, 213
- Faught, D. T., 434, 440-41
- Fawcett, Harold P., 58, 75, 223-24, 243,
 258, 402-3, 409
- Fédération des Écoles Chrétiennes
 (F.E.C.), 364
Cours d'Algèbre Élémentaire, 364
- Fédération de l'Instruction Chrétienne
 (F.I.C.), 364
Géométrie Analytique, 364
Manuel des Écoles Chrétiennes, 364
- Fehr, Howard, 243, 260, 409
- Fellowship programs for teachers, 332
- First Book of Arithmetic for the Use
 of Schools* (Dublin), 362
- First Lessons* (Colburn), 26, 105
- Fisher, J. J., 341-42
- Flexible scheduling, 143
- Foberg, J. A., 43, 198, 200
- Forces, 8, 12-13, 20, 22-23, 24-25, 34,
 36, 44, 48, 64-65, 67-72, 78, 87-88,
 95-97, 98, 118-20, 156-57, 162-63,
 184, 191, 209-12, 235-39, 370, 460-62
- Foreign influences, 12, 202, 303, 306-7,
 312-13, 318, 390
 European influences, 166
 French influences, 16, 28, 29
- Formal instruction, postponement of,
 67
- Formulas, 52, 206, 220, 242
- Foundations of Geometry* (Hilbert,
 tr. by Townsend), 41
- Fractions, 52, 415
- Franklin, Benjamin, 18, 20
- Fraser, Bishop, 380
- Frères des Écoles Chrétiennes, 356,
 362
- Freud, Sigmund, 119
- Freyle, Juan Diez, 12, 13, 16
- Frobel, Friedrich, 25, 31, 104
- Functions, 226, 253, 261, 264, 274, 276,
 368, 410, 435
 concept of, 41, 47, 57, 73, 158, 160,
 174, 178, 180, 201, 202, 204, 205-6,
 208, 209, 221, 398
- Fundamental operations, 203
- Fused mathematics, 176-77, 179
- Gagné, Robert M., 84, 140-41, 145
- Gagnon collection, 360
- Garth, W. F., 443
- General Board of Education (Ontario),
 373
- General education, 58, 60, 61, 62, 63, 248
- General Education Board (New York
 City), 198
- General Education in School and Col-
 lege*, 246-48
- General mathematics, 41, 47, 51, 52, 53,
 55, 191, 222, 241, 244, 258, 319,
 397, 398, 399, 425
- Geometric construction, 52, 192
- Géométrie Analytique* (F.I.C.), 364
- Géométrie Spontanée de l'Enfant*, La
 (Piaget), 83
- Geometry* (Greenleaf), 161-62
- Geometry, 27, 28, 33, 39, 40, 41, 47, 51,
 54, 55, 71, 73, 78, 82, 158, 161-62,
 163, 165, 166, 168, 170, 174, 176-77,
 178, 179-82, 183, 196, 201, 203, 207,
 218, 221, 222-25, 228, 232-33, 242,
 247, 253, 254, 258, 276, 277, 278,
 293, 294, 304, 308, 368, 375, 376,
 378, 388, 390, 394, 397, 405, 408,
 413, 419-20, 421, 423, 424, 434, 436,
 437, 440, 441
- algebraic methods in, 390
- analytic, 31, 55, 78, 247, 258, 260, 274,
 310, 330, 366, 381, 383, 395, 398
- applications of, 223
- concrete, 168, 169
- of conic sections, 162, 388
- coordinate, 261, 264, 390
- demonstrative, 169, 206
- elementary school, 2, 77, 164, 181, 202,
 413, 437
- goals of, 167
- intuitive, 33, 41, 138, 206, 208-9, 219,
 220, 222, 366, 389, 397, 430
- loci in, 207
- logic in, 167, 222
- nonmetric, 140
- omission of formal theories in, 207
- original exercises in, 161, 162, 167, 222
- plane, 172, 207, 261, 366
- proof in, 167, 207, 222
- real, applied problems in, 178, 179, 182
- solid, 54, 55, 162, 172, 181, 182, 207,
 223, 261
- space perception in, 181, 229, 261
- utilitarian features of solid, 181
- Geometry Project (Hawley's), 140

- Geometry with Coordinates* (SMSC), 278
- Gestalt psychology, 49, 128, 216, 217
- Gibb, E. Glenadine, 299
- GI Bill, 327
- Gillespie, William Mitchell, 31
- The Philosophy of Mathematics*, 31-32
- Ginsburg, Jekuthiel, 19
- Gleason, A. M., 256, 291
- Goals for School Mathematics* (Cambridge Conference), 57, 291, 345-46
- Goddard, E. C., 465
- Goodlad, John, 280
- Graduate education, 30
- Grammar-School Algebra* (Griffin), 174
- Grammar School Arithmetic* (Wentworth), 156
- Graphic representation, 55, 192, 203, 209, 228, 229
- Graphs, 41, 52, 158, 174, 206, 209, 220, 242, 253, 366, 390, 397, 398, 435, 437
- Grassmann, Hermann Günther, 165
- Gray, W. B., 379-80, 381, 383-84, 388, 390, 391, 394, 397-98
- Greater Cleveland Mathematics Program (GCMP), 77, 139, 284
- Greenwood, Isaac, 12, 19, 21
- Arithmetick, Vulgar and Decimal*, 12, 23
- Greenwood, James, 167
- Grossnickle, Foster E., 307
- Growth of Logical Thinking from Childhood to Adolescence*, The (Piaget), 83
- Growth of Mathematical Ideas, Grades K-12, The* (Twenty-fourth Yearbook, NCTM), 267, 429
- Grube system, 103
- Guerin-Lajoie, Paul, 367
- Gugle, Marie, 209, 219, 222
- Guidance, 67, 68, 240-41, 246
- Guidance Pamphlet in Mathematics for High School Students* (NCTM), 58, 67, 245
- "Guidance Report" (Commission on Post-War Plans), 245, 250
- Gundlach, B. H., 77
- Gwilliam, Robert B., 447
- Hall, G. Stanley, 108, 109, 117, 119, 177
- "The Contents of Children's Minds," 108
- Hall, Samuel R., 303
- Hall-Dennis report, *Living and Learning*, 389, 428
- Halsted, G. B., 41, 175, 178
- Rational Geometry*, 41
- Hamilton, Sir William Rowan, 31, 161, 165
- Hancock, John D., 233
- Hanna, Paul R., 50
- Hart, Walter W., 180, 218
- Hart, William L., 58, 231
- Hartung, Maurice L., 55, 226, 365, 409
- Harvard report, the, 241-43, 247, 248
- Hawley, Newton S., 77, 140
- Hawney's Complete Measurer*, 16
- Heaviside, Oliver, 458-59
- Hedrick, Earle R., 43, 175, 180, 186-87, 198
- Elementary Mathematics from an Advanced Standpoint*, 41
- Hedbreder, Edna, 185
- Henderson, Kenneth B., 250
- Hendrix, Gertrude, 252
- Herbart, Johann Friedrich, 25, 31, 110, 115
- Herbartian movement, 305, 306
- doctrine of interest in the, 306
- fundamental meanings in the, 306
- Heuristic approach, 32, 292. *See also* Discovery approach
- Hewett, Edwin, 309
- Hewitt, Glenn, 195
- High School Algebra* (Milne), 159
- High school entrance examinations, 386
- Higher Education Act, 332
- Hilbert, David, 41, 178, 211, 269
- Foundations of Geometry*, 41
- Hildebrandt, Martha, 260
- Hill, Thomas, 161, 166
- History of Experimental Psychology* (Boring), 185
- History of Mathematics in Europe* (Sullivan), 456
- Hofstadter, Richard, 168
- Hornbook, 13
- Horne, Edgar B., 402, 446
- Houdet, Father, 360
- Houghton Mifflin textbooks, 443
- Hrabi, Dr. J., 433-34, 446
- Hull House, 168
- Humanized Geometry, An Introduction to Thinking* (Blackhurst), 217, 223
- Huntington, Edward V., 41, 42, 180

- Hutchins, Robert M., 134
- Immigration, 184, 362, 374
- Incidental learning, 48, 50, 67, 122, 125, 318, 319
- Incommensurability, 162, 182
- Individual differences, 6, 28, 51, 56, 193, 194, 196, 197, 212-13, 244, 246, 257, 262, 286-87, 293, 407, 413
- Individual needs. *See* Social utility
- Inductive thinking, 26, 32, 160, 165-66, 192, 253, 382, 390
- Industrial education. *See* Vocational education
- Inequalities, 261
- In-service teacher education, 30, 80, 281, 308, 309, 313, 314-16, 319, 328, 329-34, 401, 441, 442, 463. *See also* Institutes
- in Russia, 429
- supervision as factor in, 314-15, 333-34
- television courses for, 443
- Insights into Modern Mathematics* (Twenty-third Yearbook, NCTM), 267
- Institutes, 74, 77, 80, 81, 252, 314, 316, 319, 330-32, 432, 463
- Boston College Mathematics Institute, 284
- Institute of Mathematical Statistics, 256
- Instruction, 83-85. *See also* Learning theory
- adapting, to the individual, 25, 413
- colonial, 13
- computer-assisted, 142, 144
- environmental approach to, 444-445
- individualized, 144
- integrated materials for, 289
- spiraling of, 55, 78
- Instructional media, 344
- Integrated mathematics. *See* Unified mathematics
- Intelligence testing, 187, 189, 202, 212, 217
- Intermediate Algebra* (Tate), 365
- Intermediate Mathematics*, 364
- International Congress of Mathematicians, 39-40, 182, 311. *See also* Commission, International, on the Teaching of Mathematics
- American commissioners, 42
- Introduction to Algebra on the Inductive Method of Instruction*, An (Colburn), 32
- Intuition, 85, 279, 292-93, 408, 447
- Irish National textbook series, 375, 377
- Issues, 7-8, 17, 22, 34, 36, 43-44, 47, 48, 63-64, 76, 86, 94-95, 156-57, 169-70, 213-18, 370, 455-60
- Izzo, J. A., 174
- Jackson, Andrew, 25
- Jamay, Denis, 354
- James, William, 186, 216
- Jefferson, Thomas, 20
- Jenkins, James, 395
- Johns, A. E., 399, 408
- Johnson, Francis Henry, 396, 427, 428
- Joint professorships, 320
- Jones, Phillip S., 250
- Jones, W. C., 168-69
- Judd, Charles H., 120, 176, 214, 216
- The Measurement of Educational Products*, 118
- Junior college, 39, 56, 60-61, 62
- Junior high school, 37, 39, 47, 51-53, 184, 206, 209, 230, 319, 391, 396, 397, 420, 446. *See also* Curriculum, junior high school
- Kandel, I. L., 40
- Kant, Immanuel, 31
- Karnes, Houston T., 299
- Karpinski, Louis C., 14
- Kaufman, Burt, 296
- Kaye, Garth, 439
- Kelly, J. L., 256
- Kemeny, J. G., 256
- Kempner, A. J., 68
- Kilpatrick, William Heard, 192, 193, 194, 195, 197, 208, 211, 251
- Kinlin, J. F., 409, 434-35, 438
- Kinnear, Miss J., 398
- Kinney, Lucien B., 220, 286
- Kirkconnel, Watson, 392
- Klein, Felix, 41, 174, 183, 206, 244, 267, 284
- Elementary Mathematics from an Advanced Standpoint: Geometry* (tr. by Hedrick and Noble), 41, 183
- Kline, Morris, 82-83, 285, 286
- Knight, F. B., 111
- Koffka, W., 216, 217

- Kohler, Kaufmann, 216, 217
 Koos, Leonard V., 51
- Laboratory teaching, 144, 174, 215, 219,
 257, 258, 293, 410, 439
 Ladreyt, Casimir, 362
 Laforce-Langevin, Jean-Pierre François,
 363
 Laing, Inspector, 407-8
 Laisant, C. A., 460
 Lancasterian system, 97, 104
 Laurin, Joseph, 362
 Laval, Monseigneur de, 355
 Lazar, Nathan, 222, 224
 Learning
 programmed, 441, 448
 rate of, 228
 spaced, 229
 spiral, 38, 57
 stimulus-response (*see* Connection-
 ism)
 transfer of (*see* Transfer of training)
 "Learning of Fundamentals in an
 Arithmetic-Activity Program,
 The" (Mapes and Harap), 122
 Learning theory, 36, 83-85, 115, 213,
 279-80
 association, 128
 field, 128, 129, 130
 LeCaron, Joseph, 354
*Lectures on Fundamental Concepts of
 Algebra and Geometry* (Young),
 42
 Legendre, Adrien Marie, 17, 161, 180
 Elements of Geometry, 16
 Legendre's *Geometry* (Davies), 29
 Leibnitz, Gottfried Wilhelm von, 31,
 363
 Le Peltrie, Mme. Marie Madeleine de,
 355
 Lephrohon, C. P., 362
Lessons in Geometry (Hill), 419-20
Linear Associative Algebra (Peirce), 30
Living and Learning (Commission on
 Aims and Objectives of Education
 in Ontario), 389, 428
 Lloyd, Daniel, 250
 Lobachevsky, Nikolai Ivanovich, 41,
 178
 Locke, John, 24, 31
 Logic, 204, 222, 223, 230
*Logic and Utility of Mathematics with
 the Best Methods Explained and
 Illustrated, The* (Davies), 34
 Lynd, Albert, 134
- McConnell, T. R., 129, 130-31, 216
 McCormick, Clarence, 307
 McCutcheon, J. M., 393, 394, 396
 McDonald, Frederick, 190
 MacDonald, John A., 385
 McDougall, A. H., 387-88, 463
 McGuffey Readers, 157
 McKenzie, R. N., 395
 Mackenzie, William Lyon, 374
 MacLane, Saunders, 256
 MacLean, Bruce, 410
 McLellan, James A., 38, 111, 307, 372,
 380, 382, 384, 387
 Elements of Algebra, 380-81, 382
 *Mental Arithmetic, Fundamental
 Rules, Fractions, Analysis*, 382
 The Psychology of Number, 111, 381
 McLeod report, 428
 McMurry, Charles A., 306, 307
 McMurry, Frank M., 110, 306, 307
 McQueen, James, 398
 Madison Project, 139, 143, 284
 Makoff, Lester M., 281
 Mallory, V., 307
 Manipulation, 47, 160, 242
 Mann, Horace, 30, 31, 43
Manpower for Research (Steelman),
 68, 235, 238
 Manpower needs, 67, 68, 69, 238
Manuel des Écoles Chrétiennes
 (F.I.C.), 364
 Marie de L'Incarnation, the Venerable,
 355
 Martin, Professor, 291
 Massachusetts Institute of Technology,
 74, 440
 Massé, Father, 354
 Mastery of topics, 127, 418
Mathematical Analysis (Goursat-Hed-
 rick), 313
 Mathematical Association of America
 (MAA), 5, 40, 42, 43, 53, 54, 63,
 197, 231, 237, 256, 271, 272, 316,
 323, 324. *See also* Commission and
 Committee *subentrics*
 founding of, 314
 Symposium on College Entrance Re-
 quirements, 68
 Symposium on Teacher Education in
 Mathematics, 79

- Works: *The Place of Mathematics in Secondary Education* (with NCTM), 226, 227-31; *The Reorganization of Mathematics in Secondary Education (The 1923 Report)*, 40-41, 46-47, 197-209, 219, 221, 222, 233, 316-19; *Universal Mathematics* (CUP), 81
- Mathematical models, 283, 289, 297, 447, 457, 463
- Mathematical Reviews*, 70
- Mathematical vs. social aims, 51
- meaning, 50
- Mathematicians, 134, 237, 242
- college, 236, 238, 248, 260
- research, 238
- Mathematics
- applications of, 68, 69-70, 79, 82, 170, 181, 227, 228, 233, 463 (see also Utilitarian aims in mathematics education)
 - applied, 175, 246, 399
 - business, 56, 219, 319, 372, 389, 447-48
 - colonial, 13-17
 - computer, 274, 344, 437-38
 - consumer, 56, 60, 219, 245-46, 257, 258, 265
 - early development of, in Western Hemisphere, 11-13
 - field work in, 404
 - grade-placement of topics in, 285, 399
 - history of, 181, 310
 - literacy in, 244, 285, 401, 404
 - logic and structure of, 63, 209, 228
 - purpose of, in secondary education, 202
 - science of, 177, 401
 - shop, 56
 - as a tool subject, 214, 246
 - unit approach to, 191
- Mathematics and Physics Association of Ontario, 387
- Mathematics and the Teacher* (C.T.F.), 444
- Mathematics educator, the, 234, 242, 454
- Mathematics for Everyday Use*, 421
- Mathematics in Everyday Life textbook series, 232
- Mathematics in General Education* (PEA), 56-57, 225-27, 230-31, 268
- "Mathematics Instruction for Purposes of General Education" (AAAS), 62
- Mathematics Teacher* (NCTM), 6, 43, 82, 194, 266
- Mathématiques Générales* (LaRue), 364
- Mathématiques Intermédiaires* (LaRue and Risi), 364
- Matrices, 78, 82
- Matriculation examinations, 382, 384, 408, 410
- May, Kenneth O., 250, 251, 409-10, 411
- Mayor, John R., 76, 277
- Meaning, 48, 51, 71, 216, 219
- teaching for, 218
- Meaning theory of arithmetic, 49, 120, 123-25, 127, 130, 138, 139
- Measurement movement. See Mental measurement
- Measurement of Educational Products, The* (Judd), 118
- Mécanique Céleste* (Laplace, tr. by Bowditch), 21, 30
- Meder, Albert E., Jr., 256, 260, 272
- Meister, Morris, 260
- Memorization, 47
- Menelaus, 402
- Mensuration, 28, 52, 161, 192, 375, 376, 377, 405, 413, 437
- Mental Arithmetic, Fundamental Rules, Fractions, Analysis* (McLellan), 382
- Mental discipline, 22, 27, 28, 32, 36, 38, 57, 99, 104, 113, 155, 156, 158, 160, 162, 163, 165, 166-67, 173, 186, 187, 193, 196, 197, 202, 205, 413
- Mental measurement, 187, 189, 202, 212, 217
- Meserve, B. E., 250
- Methods, 382, 384
- books on, 31
 - courses in, 31, 310
- Michelson, Albert Abraham, 177
- Miller, Norman, 401
- Why Study Mathematics?* 402
- Millikan, Robert H., 177
- Mills, the Reverend Mr., 356
- Milne, Frank E., 440
- Milne, William J., 160
- High School Algebra*, 159
- Minnesota National Laboratory, 281
- Minnesota School Mathematics and Science Teaching Project (MINNEMAST), 139
- Minto, Walter, 21
- Moise, Edwin E., 256, 274
- Modern mathematics

- essence of, 69
 as new subject matter, 77, 80, 124
Monographs on Topics in Modern Mathematics (Young), 42, 178
 Moore, C. N., 43, 200
 Moore, Eliakim Hastings, 4, 39, 62,
 174-75, 176, 178, 179, 183, 200, 206,
 209, 388-89, 453
 Morison, Samuel Eliot, 27
 Morse, Marston, 58, 231
 Morton, R., 307
 Mosteller, Frederick, 256, 260
 Motivation, 28, 56, 85, 183, 216, 228,
 229, 293, 356, 398
 Mulligan, Howard, 434
 Multisensory aids, 68, 78, 258, 448
 Myers, George, 176, 177, 178, 205, 208
- National Academy of Sciences, 30
 National Association of Secondary
 School Principals (NASSP), 245
 National Association of State Direc-
 tors of Teacher Education and
 Certification (NASDTEC), 80,
 348-50
 National Council of Teachers of Math-
 ematics, 5, 42, 43, 75, 80, 194-96, 202,
 211, 222-23, 232, 234, 266-68, 271,
 284, 323, 324, 332, 365, 432, 453.
See also Commission and Com-
 mittee subentries
- Canadian affiliates: Association of
 Mathematics Teachers of the
 Province of Quebec, 365, 368;
 L'Association Mathématique de
 Québec, 365; Provincial Associa-
 tion of Mathematics Teachers,
 365, 368
- founding of, 314
 regional orientation conferences in
 mathematics, 80, 281
- Works: *An Analysis of New Mathe-
 matics Programs*, 76, 284-85; *Emerg-
 ing Practices in Mathematics
 Education* (Twenty-second Year-
 book), 257-59; *The Growth of
 Mathematical Ideas, Grades K-12*
 (Twenty-fourth Yearbook), 267,
 429; *Guidance Pamphlet in Mathe-
 matics for High School Students*,
 58, 67, 245; "Guidance Report"
 (Commission on Post-War Plans),
 245, 250; *Insights into Modern
 Mathematics* (Twenty-third Year-
 book), 267; *Mathematics Teacher*,
 6, 43, 82, 194, 266; *The Nature of
 Proof* (Thirteenth Yearbook), 58,
 224, 258; *The Place of Mathematics
 in Secondary Education* (with
 MAA), 226, 227-31; "Pre-Induc-
 tion Courses in Mathematics"
 (with USOE), 59, 232; *The Revolu-
 tion in Mathematics*, 76, 81, 282;
The Teaching of Geometry (Fifth
 Yearbook), 223
- National Defense Education Act, 143,
 267
- National Education Association
 (NEA), 5, 33, 163, 168, 171, 180,
 193. *See also* Commission and
 Committee subentries
- Department of Child Study, 108
 Department of Superintendence, 52,
 190
 mathematics committee (Dept. of
 Superintendence), 52
 National Council on Education, 163
 National Herbartian Society, 110, 115
National Mensuration, 379
 National Research Council (NRC),
 256, 270
- National Science Foundation (NSF),
 72, 74, 75, 76, 81, 139, 235, 251, 256,
 270, 271, 291, 330, 345
- National Society for the Scientific
 Study of Education, 110
- National Society for the Study of
 Education, 50
- National Teachers Association, 33
- Nature of Proof, The* (Thirteenth
 Yearbook, NCTM), 58, 258
- Nautical Almanac Office, 30
- Negro teachers and students, plight of,
 234
- New Algebra for High Schools, A*
 (Crawford, Dean, and Jackson),
 364
- New Analytic Geometry, A* (Durrant
 et al.), 365
- New and Complete System of Arith-
 metic Composed for the Use of
 the Citizens of the United States, A*
 (Pike), 15-16
- Newcomb, Simon, 30
- Newell, 397
- Newell, M. J., 195
- New England Association of Colleges
 and Secondary Schools, 169

- New England Association of Teachers of Mathematics, 80
- Newsom, C. V., 256
- Newton, Isaac, 31
- New York Mathematical Society, 4, 30
Bulletin, 30
- Nimitz, C. W., 58-59, 231
- 1923 *Report, The. See Reorganization of Mathematics in Secondary Education, The*
- Normal schools, 30-31, 37, 301-2, 302-8, 310, 376, 414, 418. *See also sub-entries, by name, under Schools*
- North Central Association of Colleges and Secondary Schools, 169, 171, 175
- Northrop, Eugene P., 63, 260
- Nova Scotia Mathematics Teachers' Association, 440
- Nova Scotia Summer School for Teachers, 443
- Nuffield Mathematics Project, 144, 444, 448
- Number, 229, 437
as ratio, 38
familiar properties of, 284
ideas of, 26, 130
logical approach to the teaching of, 416
science of, 26, 38, 107, 157
structural properties of, 49, 226, 344
- Number Highway textbook series, 417
- Numeration systems, 283
bases for, 111, 284
Mayan system, 11
- Nunn, T. Percy, 397
- Oakley, C. O., 249
- Objectives in mathematics education, 6, 98-99, 109-10, 120-21, 134-35, 173, 189, 193, 201, 202-4, 297, 403-4, 406, 411, 415, 457-58. *See also Articulation; Utilitarian aims in mathematics education*
- battle of, 193, 197, 214, 217, 218, 231, 234, 241, 248
- disciplinary objectives, 201, 202, 203, 220
- in the secondary school, 55, 155
- Obourn, Ellsworth S., 209
- Occupational training. *See Vocational education*
- Olney, A. C., 43, 200
- Ontario
course of study of 1841, 375-76; of 1854, 376-77; of 1865, 377-78; of 1871, 379-80, 381; of 1878, 380, 381-82; of 1885, 383; of 1896, 388; of 1904, 389-90; of 1909, 390; of 1924, 394; of 1928, 394; of 1936, 397; of 1938, 398, 402; of 1952, 407-8
- Curriculum Revision Experiment (Porter Plan), 403, 404, 406, 410
- Ontario Curriculum Institute, 436
- Ontario Institute for Studies in Education, 436
- Ontario Teachers' Federation, 434 (*see also Commission, Ontario Mathematics*)
- Ontario Association of Teachers of Mathematics and Physics (O.A.T.M.P.), 380, 398
- Ontario Education Association (O.E.A.), 389, 390, 394, 401, 403, 404
- Ontario Mathematics Gazette (O.M.C.), 441
- Operations, 57, 226, 284
- Organization for European Economic Cooperation (OEEC), 345, 429
- Orleans, Joseph B., 51
- Orth, Allen, 250
- Overn, Orlando, 158, 159, 209
- Page, David A., 77, 78, 140, 252, 255
- Panet, Claude, 360
- Parallel courses, 173, 292, 405, 436
- Parker, Colonel, 215
- Pasch's postulate, 181
- Patterns in Arithmetic project, 139
- "Payment by results," 380, 381
- Peano, Giuseppe, 180
- Pedagogy, 31
- Peirce, Benjamin, 30, 165
Linear Associative Algebra, 30
- Peirce, Cyrus, 303-4
- Perrault, Charles, 360
- Perry, John, 39, 174, 183, 388, 389, 397
- Perry movement, 39, 179, 389
- Pestalozzi, Johann Heinrich, 21, 22, 24, 25, 31, 32, 97, 103, 104-5, 306, 362, 416
- Petrie, Professor, 402
- Phillips, C. E., 374, 386
- Phillips, D. E., 111
- Philosophy, natural, 19

- Philosophy of Arithmetic, The* (Brooks), 31
- Philosophy of Mathematics, The* (Bledsoe), 31
- Philosophy of Mathematics, The*, Translated from the *Cours de Philosophie Positive* of Auguste Comte (Gillespie), 31-32
- Piaget, Jean, 83, 142, 145, 294, 441, 448, 461
- The Child's Conception of Number*, 83
- developmental stages, 142
- La Géométrie Spontanée de l'Enfant*, 83
- The Growth of Logical Thinking from Childhood to Adolescence*, 83
- La Représentation de l'Espace Chez l'Enfant*, 83
- Pieri, M., 180
- Place of Mathematics in Secondary Education, The* (NCTM and MAA), 226, 227-31
- Plan of a Seminary for the Education of the Instructors of Youth* (Gallaudet), 303
- Playfair, John, 16
- Plessis, Monseigneur, 355
- Porter, Dana, 403, 404-5, 410
- Porter Plan, 403, 404, 406, 410
- Postulates, 181, 223, 269
- Practical Arithmetic, The* (Perkins), 100
- Practical Mathematics* (Palmer), 185
- "Pre-Induction Courses in Mathematics" (NCTM and USOE), 59, 232
- "Preparation of High School Science and Mathematics Teachers, The" (AAAS), 327-28
- Price, G. Baley, 75, 249, 272
- Primary Arithmetic* (Wentworth), 415
- Probability, 78, 237, 276, 292, 294, 330, 344, 433, 435
- with statistical applications, 258, 261, 265 (see also Statistics)
- Problems, 408
- engineering, in vocational schools, 185
- practical, 207
- real, applied, 178, 179, 182, 183, 196, 214, 215
- from science, 177
- Problem solving, 57, 84, 85, 226, 229, 418
- accuracy in, 166, 389, 399, 403, 404
- approximation in, 57, 226, 394, 404
- Process of Education, The* (Bruner), 84, 280, 288
- Programmed materials, 281, 443
- Progressive education, 94, 140, 213, 225, 396
- activity unit in, 140
- movement, 215, 217, 234, 240, 414
- Progressive Education* (PEA), 119
- Progressive Education Association (PEA), 55, 56, 118, 119, 194, 215, 225, 233, 259. See also Commission and Committee subentries
- Works: *Mathematics in General Education*, 56-57, 225-27, 230-31, 268; *Progressive Education*, 119
- Progressive High School Algebra* (Hart), 365
- Proof, 57, 69, 166, 224, 227, 285, 390.
- See also Geometry, proof in
- Proportion, 52
- Protestant School Board of Greater Montreal, 367
- Psychologia Rationalis* (Wolff), 99
- Psychological research, 36, 213
- Psychologists, 78, 442
- European, 186
- task-analysis work of, 142
- Psychologizing, 33, 39, 417
- Psychology, 3, 83-85, 97, 102, 103, 104, 106, 113, 117, 132, 140, 145, 185-87, 204-5, 212, 213, 216, 217, 228, 234.
- See also Behaviorism; Connectionism; Faculty psychology; Gestalt psychology; Learning theory; Mental discipline; Transfer of training
- field theories of, 217
- functional approach to, 186
- Psychology of Number, The* (Dewey and McLellan), 111, 381
- PTA, 77, 284
- "Public School Leaving Examination" (Northwest Territories), 419
- Pullen, Harry, 405-7
- Quantifiers, 254
- Quebec
- Christian Brothers in, 356
- Frères des Écoles Chrétiennes in, 362
- Jesuits in, 354, 359-60
- Rebellion of 1837 in, 356
- Récollets in, 354

- Quebec (*Continued*)
 religious influence in, 354
 Roman Catholics in, 355
 struggle of two cultures in, 353-54
 Questionnaire studies, 205
- Raisenne, Jérôme, 360
 Rankin, W. W., 80
 Ratio, 38, 52
Rational Geometry (Halsted), 41
 Ray, Joseph, 157, 158
 Intellectual Arithmetic, 157
 The Little Arithmetic, 157
 New Practical Arithmetic, 157
 Readiness, 48, 49-50, 85
 Real number system, 294
 Reed, E. M., 103-4
 Rees, Mina, 256, 271
 Reeve, William David, 184, 208, 211,
 212, 222
 Reform, 33, 72-76, 81-83, 94, 250, 251,
 281-84, 287-91, 387-92, 399-411
 Relational thinking, 230
 Rensselaer Polytechnic Institute, 20, 29
*Reorganization of Mathematics in
 Secondary Education, The*
 (MAA), 40-41, 46-47, 197-209, 211,
 219, 221, 222, 233, 316-19
*Report of the Commission on Mathe-
 matics* (CEEb), 74
*Report of the Subcommittee on Edu-
 cation* (Alberta Post-War Recon-
 struction Committee), 418
*Représentation de l'Espace Chez l'En-
 fant, La* (Piaget), 83
 Research in mathematics education, 41-
 42, 130, 454-55
 Revolution, 78, 79, 81, 249, 281, 290, 460
Revolution in Mathematics, The
 (NCTM), 76, 81, 282
 Rice, Joseph Mayer, 108-9, 114-15
 "Educational Research: Causes of
 Success and Failure in Arithmetic,"
 109
 Rickover, Hyman, 134
 Rigor, 166, 180, 292-93, 447
 Rittenhouse, David, 20-21
 Robb, C. W., 394
 Robert, l'Abbé, 364
 Complements d'Algèbre, 364
 Robertson, W. J., 387
 Robinson, Floyd G., 429, 441-42
 Rosenberger, N. B., 307
 Rosenbloom, Paul, 256
- Rourke, R. E. K., 260, 398-99, 401, 429
 Rousseau, Jean Jacques, 25, 104, 119
 Emile, 289
 Royal Commission of Inquiry on Edu-
 cation in the Province of Quebec,
 365, 402
 Royal Institution for the Advancement
 of Learning, 355-56
 Royaumont seminar, 429
 Rugg, Harold O., 191, 206
 Russell, Bertrand, 180
 Ryerson, Egerton, 372, 375, 377, 378,
 380, 396, 412
- Safford, Truman, 173
 Saint-Sulpice library, 360
 Sandiford, Peter, 114, 117
 Sangster, Herbert, 377
 Elements of Algebra, 379
 Irish National Arithmetic (rev.), 377
 National Arithmetic, 377
 Sawyer, W. W., 77
 School administration, analogy of, to
 business management, 188-89
 School and College Study of Ad-
 mission with Advanced Standing,
 71
*Schoolmaster's Assistant, The: Being a
 Compendium of Arithmetic Both
 Practical and Theoretical*, (Dil-
 worth), 14-15
 School Mathematics Study Group
 (SMSG), 74-76, 79, 81-82, 83, 139,
 146, 208, 223, 235, 236, 237, 238,
 256, 257, 267, 268, 269-81, 284, 438,
 440, 441, 443, 463
 National Longitudinal Study of
 Mathematical Abilities, 75, 281
 Panel on Elementary School Mathe-
 matics, 77
 self-evaluation, 281
 textbooks, 82
 Work: *Geometry with Coordinates*,
 278
- Schools
 accreditation of, 171
 Boston Latin Grammar School, 18
 Cass Technical School (Detroit), 206
 colonial, 13, 94, 98
 criticism of, 134
 common, 357, 371, 378, 379
 elementary (*see* Elementary school)
 English High School, 27
 federal versus local control of, 240

- free, 372, 379
 Girls High School, 27
 grammar, 376, 378, 379
 Horace Mann School, 43
 Jacques Cartier Normal School, 357
 Latin grammar, 17, 18
 Laval Normal School, 357
 Lincoln School (Columbia University), 43, 191
 McGill Normal School, 357
 media in, 143
 Michigan State Normal School, 31
 missionary, 413
 nongraded, 143, 439
 Nova High School (Fort Lauderdale, Fla.), 296
 Nova Scotia Summer School for Teachers, 443
 Ontario School of Pedagogy, 372
 Parker School (Chicago), 176, 206, 215
 private, 372
 secondary, 27-28, 39-41, 51, 78-79, 162-63, 188-92, 231-33, 307, 312, 445-46 (see also Junior high school; Senior high school; Teacher training)
 Toronto Normal School, 377
School Science and Mathematics (CASMT), 39, 43, 177
 Schorling, Raleigh, 43, 47, 68, 200, 212, 213, 215, 221, 222
 Science of education, 190
 Scientism, 93-94, 106, 107-17, 118, 188, 202, 214, 215
 Sectional movements in Canada, 393
 Seeing through Arithmetic textbook series, 366, 433
 Seeing through Mathematics textbook series, 432
 Self-instruction, 12, 20, 362
 Seminar on New Thinking in School Mathematics (OEEC), 429
 Seminary
 Grand Séminaire de Québec, 355 (see also University, Laval University)
 of Nicolet, 362
 Séminaire de Québec, 361, 363
Senior Algebra (Durrell and Wright), 422-23
 Senior high school, 53-58
 election of mathematics courses in, 207
 Sequences, 253
 Sets, 73, 82, 254, 276, 282, 283, 344, 410, 435, 436
 Shuster, Carl N., 68, 404
 Seath, John, 380, 383, 392
 Seerly, H. H., 173
 Shanks, Merrill, 269
 Shibli, Jabir, 161
 Sigurdson, Solberg, 167, 173, 178, 205
 Simcoe, Lord, 371, 372
 Simon, Theodore, 118
 Simson, Robert, 16, 17
 Skills, 62, 166, 170, 218, 222, 260, 290, 405
 manipulative, 47, 160, 242
 Slaughter, H. E., 180
 Slow learner, the, 212, 213, 228, 244, 290
 Smiler, Helen B., 455
 Smith, David Eugene, 19, 38, 42, 43, 158-59, 168, 175, 180, 182, 193-94, 200, 208, 209, 307, 453, 454
 The Teaching of Elementary Mathematics, 42, 307
 Smith, J. Hamblin, 382
 A Treatise on Arithmetic, 424
SMSG, The Making of a Curriculum (Wooton), 75
 SMSG textbooks, 82
 Sneddon, David, 211
Socialized Mathematics (Cooper), 421
 Social Science Research Council, 81
 Social utility, 6, 48, 58, 98-99, 110, 120, 122-24, 125, 131-32, 133, 135-36, 183, 190-92, 193-94, 196, 197, 214, 215, 220, 224, 225, 227, 243, 244, 246, 257, 277, 290, 294, 318-19, 386, 395, 404, 405, 418, 442
 Society
 needs of (see Utilitarian aims in mathematics education)
 needs of individual in (see Social utility)
 Sonley, J. A., 403-4, 464
 Southern Association of Colleges and Secondary Schools, 169
 Specialists, 143
 Speer, William W., 38, 111
 Spencer, Herbert, 31, 32, 38
 Spitzer, H., 307
 Sputnik, 135, 231, 256, 267, 327
 Stamper, A. W., 454
 Stanford University Institute for Mathematical Studies in the Social Sciences, 139

- Statistical inference, 258
 Statistics, 41, 47, 51, 78, 207, 242, 246, 247, 276, 292, 310, 319, 330, 344
 Steelman, John R., 68-69, 235, 238
Manpower for Research, 68-69
 Stern, Catherine, 444
 Stimulus-response. *See* Connectionism
 Stone, C. W., 454
 Stone, John C., 191-92, 215, 218, 219, 307
 Elementary Algebra, First Course, 178
 Junior High School Mathematics, Book I, 191-92
 Stone, Marshall, 146, 231, 256, 295
 Stone, Mildred, 190
 Stowe, Calvin E., 31
 Strachan, the Reverend Dr., 373, 374
 Arithmetic, 373
 Strayer-Upton *Arithmetics, Higher Grades*, 219
 Streaming, 257, 262, 368-70
 Structural properties of number, 49, 226, 344
 Structure of mathematics, 6, 69, 73, 85, 137, 140, 216, 242, 260, 277, 279, 283, 285, 288, 431
 as an abstract system, 283
 axiomatic, 269
 importance of, in teaching, 84
 Stuart, John, 355
 Students
 below-average, 274
 college-capable, 266, 273, 296
 gifted, 71, 248-50, 267, 274
 Superior Council of Public Instruction, 358
 Superposition, 390
 Suppes, Patrick, 77, 85, 139, 143, 144, 145
 Surveying, 19
Surveying (Davies), 29
 Swenson, John A., 221
 Sylvester, James Joseph, 30, 165-66
American Journal of Mathematics, 30
 Symbolic logic, 82
Symbolical Euclid (Blakelock), 374
 Symbolism, 57, 187, 227, 230
 Syracuse University-Webster College
 Madison Mathematics Project, 139, 143, 284
 Teacher certification, 80, 305, 316, 328, 344
 Teacher preparation for new programs, 278-79, 289, 296
 Teachers
 college, 260
 counselors for, 328
 high school, 260
 modern algebra courses for, 80
 probability courses for, 80
 statistics courses for, 80, 310
 summer sessions for, 309
 Teachers colleges, 302, 308, 310. *See also* Normal schools
 Teacher training, 30-32, 37, 39, 42-43, 61-63, 79-80, 201, 252, 257, 378, 428, 463. *See also* Normal schools;
 Commission, International, on the Teaching of Mathematics; Committee, National, on Mathematical Requirements
 of college teachers, 340 (*see also* Committee, on the Undergraduate Program in Mathematics)
 of elementary school teachers, 37, 311, 313, 318, 320, 321, 325-26, 333, 340-41, 348-49, 418-19 (*see also* Commission, on Mathematics; Committee, on the Undergraduate Program in Mathematics)
 fifth-year program in, 319, 345
 films for, 443
 implementation of recommendations for, 341-45
 internships, 345
 of junior college teachers, 56, 62
 professional courses in, 310
 recommendations for, 334-41
 of secondary school teachers, 62, 79-80, 311-12, 321, 341, 349-50, 449 (*see also* Canadian Mathematics Congress; Commission, Joint; Commission, on Mathematics; Commission, on Post-War Plans; Commission, on the Training and Utilization of Advanced Students of Mathematics; Committee, Co-operative, on the Teaching of Science and Mathematics; Committee, Secondary School Curriculum; Committee, on the Undergraduate Program in Mathematics)
 survey of teachers of high school mathematics, 328
 Teaching
 demonstration, 315

- methods, 285, 414
 as a profession, 302, 308, 309, 311,
 320-21, 357
Teaching of Elementary Mathematics,
The (Smith), 42, 307
Teaching of Geometry, The (Fifth
Yearbook, NCTM), 223
Teaching of Mathematics in the Ele-
mentary and Secondary School,
The (Young), 42, 307
Teaching the New Arithmetic (Wil-
son), 120
 Technology, 135, 248
 Team teaching, 143, 176, 206, 215
 Television courses, 80, 367, 432, 439,
 440, 442-43, 448
 Terman, Lewis Madison, 118
 Tests, 215, 389, 413, 418, 420, 425
 intelligence (*see* Mental measure-
 ment)
 standardized, 201, 205, 313, 315, 380,
 381, 412, 419
Textbook of Geometry, A (Went-
worth), 162
 Textbooks, 134, 156-57, 185, 217, 218,
 238, 357, 367, 406. *See also under*
title or author's name
 catechetical question-and-answer
 format in, 17
 in French-speaking Canada, 360-65
 fusion, 176-77, 179
 graded, 116
 nineteenth-century arithmetic 31
 non-Euclidean geometry, 178
 as teaching devices, 160
Theoretical Geometry (Baker), 422
Theory of Games and Economic Be-
havior, The (Morgenstern and von
Neumann), 70
 Thomas, George B., Jr., 260
 Thorndike, Edward L., 38, 43, 47, 49,
 115-16, 117, 118, 186-90, 207, 213-
 14, 215, 217, 224, 313, 417, 420, 421,
 423. *See also* Connectionism
 Junior Mathematics series, 420
The Psychology of Algebra, 38, 187,
213
The Psychology of Arithmetic, 38,
113-14
The Thorndike Arithmetics, 38
Today's Geometry (Reichgott and
Spiller), 223
 Tracks
 two-track programs, 7, 54, 55, 60, 257
 three-track programs, 56, 193
 multitrack programs, 257
 Transfer of training, 38, 56, 58, 84, 137,
 187, 190, 196, 202, 205, 223, 227, 258
Treatise on Arithmetic, A (Smith), 424
 "Trends in the Education of Secondary
 School Mathematics Teachers"
 (Schumaker), 329
Trigonométrie canonique (Morin), 360
Trigonométrie rectiligne (LaRue), 364
 Trigonometry, 28, 51, 54, 55, 73, 78, 82,
 172, 182, 206, 207, 221, 223, 228,
 234, 242, 247, 254, 261, 276, 310,
 366, 374, 377, 378, 394, 397, 405,
 413, 423, 434, 440
 in college entrance examinations, 209
 numerical, 41, 47, 55
 Tucker, Albert W., 256, 260, 409
 Tyler, H. W., 43, 200
 Understanding, 48, 62, 71, 72, 85, 131,
 137, 177, 203, 216, 219, 225, 228,
 229, 232, 242, 254, 255, 260, 408, 431,
 458
 Underwood, P. H., 43, 200
 Unification movement, 173-77, 207,
 421-24
 reaction to, 177-79
 in science and mathematics, 177
 Unified mathematics, 33, 55, 78, 172-73,
 174, 176-77, 179, 185, 192, 206, 219,
 221, 244, 254, 389, 398, 401, 404, 411,
 444
 movement, 179, 215
 textbooks for, 179
 Unifix cubes, 443
 Unifying concepts, 57, 73, 138, 160, 166,
 174, 178, 216, 230, 248, 260, 261, 267,
 282, 283, 284, 402-3
 Unifying strands, 138, 140
 Union Act of 1840, 375
Universal Mathematics (CUPM), 81
 University
 of Alberta, 432
 Bishop's University, 368
 Brown University, 18, 31
 of California at Los Angeles, 80
 of Chicago, 63, 176, 238, 270, 271, 331,
 454
 of Colorado, 74, 330, 331
 Columbia University, 18, 43, 62, 81,
 186; Teachers College, 31, 42, 454
 Cornell University, 27
 Dartmouth University, 15, 16, 18

- University (*Continued*)
 DePauw University, 331
 Duke University, 80, 316, 330
 Emory University, 331
 Harvard University, 15, 16, 18, 19,
 21, 27, 28, 31, 158
 of Illinois, 72, 331
 of Illinois Arithmetic Project, 77, 140
 of Illinois Committee on School
 Mathematics (UICSM), 72-73, 74,
 76, 235, 238, 251-55, 256, 257, 258,
 267, 273, 284, 448
 Illinois State Normal University, 309
 Johns Hopkins University, 30
 Laval University, 355, 359, 361
 Louisiana State University, 80
 McGill University, 367, 368
 McMaster University, 399
 of Maryland Mathematics Project
 (UMMaP), 76, 83, 238, 269, 273,
 277, 284
 of Michigan, 27, 29, 31, 80, 331
 Université de Montréal, 359, 364
 New York University, 31
 Northwestern University, 41, 331
 Oklahoma A. and M. University, 331
 of Pennsylvania, 18, 20, 21
 of Philadelphia, 18, 20
 Princeton University, 18, 20, 21, 27
 of Quebec, 360
 Queens University, 401-2
 of Rochester, 331
 Rutgers—the State University, 18,
 331
 Shaw University, 332
 Sir George Williams University, 368
 State, of New York College at
 Plattsburg, 331
 of Toronto, 382, 383
 of Virginia, 20
 of Wisconsin, 79, 331
 Yale University, 16, 18, 19, 27, 28,
 75, 272
 Ursuline Convent, 355
 U.S. Bureau of Education, 40
 U.S. Coast and Geodetic Survey, 30
 U.S. Office of Education, 72, 74, 232,
 251, 328, 332. *See also* U.S. Bureau
 of Education
 survey of teachers of high school
 mathematics, 328
 Work: "Pre-Induction Courses in
 Mathematics" (with NCTM), 59,
 232
- Usage cult, 207
 Utilitarian aims in mathematics educa-
 tion, 6, 28, 48, 67, 78, 95, 98-99,
 105, 110, 116, 120, 131-32, 133, 144,
 183, 190-92, 197, 219, 230, 231-33,
 234, 237, 239, 240, 258, 285, 321,
 389, 401, 418
- Van Engen, Henry, 139, 260, 272, 365
 Van Liew, C. C., 306
 Variables
 as quantities, 178
 as unknowns, 160
 Vaughn, Herbert, 252
 Veblen, Oswald, 41, 42, 180
 Verbalization, 255, 294
 Ville Marie (Montreal), 355
 Vocational Arithmetic (Holton and
 Paddock), 185
 Vocational education, 28, 51, 157, 184-
 85, 206, 378, 386, 393, 414
 Vocational needs, 53, 58, 158, 257
- Wallis, John, 19
 Walsh, J. L., 256
 Washburne, Carleton, 125-26, 127
 Washington, George, 21
 Weaver, Fred, 295
 Weeks, Eula A., 43, 200
 Welte, Herbert, 222
 Wertheimer, Max, 216, 217
 West Point, 20, 28, 29
 Wheat, Harry G., 121, 307
 Why Study Mathematics? (Canadian
 Mathematics Congress), 402
 Why Study Mathematics? (Miller),
 402
 Wightman, S., 394
 Wigner, E. P., 456
 Wilder, R. L., 272
 Wilks, Samuel S., 231, 256, 259, 260,
 270, 272
 William and Mary, College of, 18
 Williams, S., 15
 Wilson, Guy M., 110, 122-23, 125, 190,
 307
 Wilson, Jack, 258
 Winthrop, John, 19, 21
 Wolff, Christian, 99
 Psychologia Rationalis, 99
 Wolfe, Dael, 250
 Woodring, Paul, 134
 Woods Hole Conference, 136, 280
 Woodward, B., 15, 157

- Woodworth, R. S., 113
Wooton, William, 236, 270, 271, 272
Workman, J. G., 394-95
Workshops, 316, 328
World War II, 238, 327
 the effect on mathematics of, 58-60,
 231-33
 the effect on secondary schools of,
 231-33
Wren, F. Lynwood, 299, 307
Wurteen, Nathaniel, 14
Yates, Robert C., 409
Yerkes, Robert M., 118-19
Young, George Paxton, 377-79, 382
Young, Jacob William Albert, 42, 169,
 175, 176, 178, 207, 208, 307, 453, 454
 Monographs on Topics in Modern
 Mathematics, 42, 178
Young, John Wesley, 42, 43, 195, 198,
 200, 202
 Young Secretary's Assistant, The
 (Hill), 12
Zacharias, Jerrold R., 74, 289, 291
Zenger, J. Peter, 16